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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,840	04/15/2004	Lawrence E. Gibson	200308693-1	9449

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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

MIGGINS, MICHAEL C

ART UNIT	PAPER NUMBER
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1772

MAIL DATE	DELIVERY MODE
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06/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/825,840

Applicant(s)

GIBSON ET AL.

Examiner

Michael C. Miggins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 43-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42, 43-50 is/are rejected.
- 7) ☒ Claim(s) 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

The species restriction only has been withdrawn and claims 1-42 have been examined together. Method claims 43-50 are still restricted according to the election/restriction requirement of 10/13/06 and claims 43-50 have been withdrawn. Applicant is correct in that said method claims can be rejoined so long as they contain every allowed limitation of the product claims.

1. Claims 43-50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/10/06.
2. This application contains claims 43-50 drawn to an invention nonelected with traverse in Paper No. 11/10/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-42 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of U.S. Patent No. 7,063,413 in view of Takago (US 4291144).

The difference between instant claims 1-42 and those of 7,063,413 is that the instant claims recite a one-part epoxy adhesive instead of a two-part epoxy adhesive.

Takago discloses a one-part epoxy adhesive (column 1, line 64 through column 2, line 2) in order to avoid the problems of two part epoxy adhesives (column 1, lines 24-34) and provide an epoxy adhesive which is easily stored and curable without heating (column 1, line 64 through column 2, line 2).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 29 recites the limitation "said cycloaliphatic polyamine" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 39 and 41-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Tom et al. (US 6787049).

Tom discloses a fluid ejection device (10 from Fig. 1), comprising a substrate (column 5, lines 64-65) having means for ejecting a fluid (86 from Fig. 1, column 8, line 15), means for supporting said substrate (50 from Fig. 1), and means for adhering said substrate to said means for supporting said substrate (column 8, lines 9-14, column 9, lines 8-16), further comprising means for forming a chamber (30 from Fig. 1) and means for forming a nozzle (108 from Fig. 1) and further comprising means for performing logic on said substrate (column 6, lines 48-51).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Silverbrook (US 6019457).

Tom fails to disclose wherein said means for ejecting said fluid further comprises means for ejecting essentially a drop of said fluid and the volume of said fluid is in the range of from about 5 femto-liters to about 900 pico-liters.

Silverbrook discloses wherein said means for ejecting said fluid further comprises means for ejecting essentially a drop of said fluid and the volume of said fluid is in the range of from about 5 femto-liters to about 900 pico-liters (column 17, lines 14-21) for the purpose of improving resolution.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided said means for ejecting said fluid further comprises means for ejecting essentially a drop of said fluid and the volume of said fluid is in the range of from about 5 femto-liters to about 900 pico-liters in the fluid ejection device of Tom in order to improve resolution as taught or suggested by Silverbrook.

12. Claims 1-3, 5-13, 15-18, 26-27, 29-31 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Sbokal (US 3336241).

Tom discloses a fluid ejection device (10 from Fig. 1) comprising a substrate carrier (34 from Fig. 1) having a substrate receiving surface (50 from Fig. 1), a substrate

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(column 5, lines 64-65) having at least one fluid ejector (86 from Fig. 1) disposed on said substrate an epoxy resin disposed between said substrate and said substrate receiving surface (column 8, lines 9-14, column 9, lines 8-16) (applies to claims 1 and 13).

Tom fails to disclose a one part epoxy adhesive which comprises an epoxy resin having a polyglycidyl ether of a polyhydric phenol and a solid cycloaliphatic amine curing agent.

Sbokal discloses a one part epoxy (column 9, lines 3-15) adhesive (column 1, lines 20-25) which comprises an epoxy resin having a polyglycidyl ether of a polyhydric phenol (column 2, lines 35-62) and a solid cycloaliphatic amine curing agent (since cycloaliphatic amines are disclosed, column 7, line 4-75) for the purpose of providing improved adhesiveness mechanical strength and resistance to discoloring and chalking (column 1, lines 68-72, column 8, lines 67-75).

With regard to the dependent claims Tom discloses a nozzle proximate to the fluid ejector (108 and 86 from Fig. 1, column 7, lines 10-35), thermal resistor, piezoelectric actuator, acoustic actuator (column 4, lines 32-65), reservoir fluidically connected to fluid ejector (32 from Fig. 1 and column 5, lines 30-52 and column 6, lines 40-45), fluid definition layer (32 from Fig. 1), a chamber and orifice defining a bore (30 and 54 respectively from Fig. 1), fluid inlet channels and coupled to the chamber (column 6, lines 40-45), a device body coupled to the substrate carrier (34 and 50 respectively from Fig. 1), a reservoir (32 from Fig. 1) coupled to the substrate which is coupled to nozzle (108 from Fig. 1, column 5, lines 27-67, column 6, line 61 through

column 7, line 35), a device on the substrate an electrical trace coupling the device to the fluid ejector (demultiplexer, column 6, lines 29-60), further comprises a transistor (column 6, line 58).

With regard to the dependent claims Sbokal discloses epoxy adhesive further comprises a liquid aromatic amine curing agent (column 7, lines 21-48), wherein the glycidyl ether is either bisphenol A or bisphenol F (column 3, line 43 through column 4, line 28), wherein the cycloaliphatic amine curing agent is epoxy modified (column 7, lines 35-40), wherein the curing agent can be succinic anhydride and boron trifluoride amine complexes, the epoxy adhesive further comprises filler (column 8, lines 51-57).

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Sbokal (US 3336241), as applied to claims 1-3, 5-13, 15-18, 26-27, 29-31 and 37 above, and further in view of Silverbrook (US 6019457).

Tom fails to disclose wherein said means for ejecting said fluid further comprises means for ejecting essentially a drop of said fluid and the volume of said fluid is in the range of from about 5 femto-liters to about 900 pico-liters.

Silverbrook discloses wherein said means for ejecting said fluid further comprises means for ejecting essentially a drop of said fluid and the volume of said fluid is in the range of from about 5 femto-liters to about 900 pico-liters (column 17, lines 14-21) for the purpose of improving resolution.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided said means for ejecting said fluid

further comprises means for ejecting essentially a drop of said fluid and the volume of said fluid is in the range of from about 5 femto-liters to about 900 pico-liters in the fluid ejection device of Tom in order to improve resolution as taught or suggested by Silverbrook.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Sbokal (US 3336241), as applied to claims 1-3, 5-13, 15-18, 26-27, 29-31 and 37 above, and further in view of Bonne et al. (US 7003418).

Tom fails to disclose a substrate carrier comprising a ceramic chip.

Bonne disclose a substrate carrier comprising a ceramic chip (column 6, lines 28-51) in an ink jet printer (column 9, lines 11-19) for the purpose of providing accurate sensing of temperature and/or ink viscosity (column 9, lines 11-19).

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a substrate carrier comprising a ceramic chip in order to sense temperature and/or ink viscosity as taught or suggested by Bonne.

15. Claims 19-21 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Sbokal (US 3336241), as applied to claims 1-3, 5-13, 15-18, 26-27, 29-31 and 37 above, and further in view of Feinn (US 6325491).

The one part epoxy is disclosed in Sbokal as discussed above.

Tom fails to disclose a substrate bond pad and electrical interconnection electrically coupled to the substrate encapsulated by an adhesive, wherein the adhesive forms a moat-fill adhesive between the cover and the substrate, wherein the adhesive forms a glob top substantially encapsulating the electronic device, wherein the adhesive forms an underfill between the substrate carrier and electrical conductor.

Feinn discloses a substrate bond pad and electrical interconnection electrically coupled to the substrate encapsulated by an adhesive (column 8, line 42 through column 9, lines 1-8), wherein the adhesive forms a moat-fill adhesive between the cover and the substrate (Figs. 5-6), wherein the adhesive forms a glob top substantially encapsulating the electronic device, wherein the adhesive forms an underfill between the substrate carrier and electrical conductor (Figs. 4-7) (column 5, line 60 through column 6, line 8, column 6, lines 45-67) for the purpose of improved adhesion of the parts and preventing short circuits.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a substrate bond pad and electrical interconnection electrically coupled to the substrate encapsulated by an adhesive, wherein the adhesive forms a moat-fill adhesive between the cover and the substrate, wherein the adhesive forms a glob top substantially encapsulating the electronic device, wherein the adhesive forms an underfill between the substrate carrier and electrical conductor in the fluid ejection device of Tom in order to provide improved adhesion of the parts and preventing short circuits as taught or suggested by Feinn.

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16. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Sbokal (US 3336241) and Feinn (US 6325491), as applied to claims 19-21 and 24-25 above, and further in view of Childers (US 6130695).

Tom fails to disclose a memory device having at least one parameter of ejectable fluid coupled and communicable to a controller.

Childers discloses a memory device having at least one parameter of ejectable fluid coupled and communicable to a controller (column 14, lines 38-67) in an ink jet printer so that ink containers having a variety of ink volumes may be used (column 2, lines 49-61).

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a memory device having at least one parameter of ejectable fluid coupled and communicable to a controller in the fluid ejection device of Tom so that ink containers having a variety of ink volumes may be used thus lowering costs as taught or suggested by Childers.

17. Claims 32-33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Sbokal (US 3336241), as applied to claims 1-3, 5-13, 15-18, 26-27, 29-31 and 37 above, and further in view of Goel (US 4728384).

Tom fails to disclose the adhesive containing a thixotrope of fumed silica and fillers of talc.

Goel discloses an epoxy adhesive (column 1, lines 5-12) comprising a thixotrope of fumed silica and fillers of talc (column 3, lines 20-43) in order to prevent sagging.

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Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided the adhesive containing a thixotrope of fumed silica and fillers of talc in the fluid ejection device of Tom in order to prevent sagging of the adhesive as taught or suggested by Goel.

18. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom et al. (US 6787049) in view of Sbokal (US 3336241), as applied to claims 1-3, 5-13, 15-18, 26-27, 29-31 and 37 above, and further in view of Chapman (US 5013383).

Tom fails to disclose the epoxy adhesive further comprising a silane coupling agent between 0.5 and 2.5 weight percent.

Chapman disclose an epoxy adhesive further comprising a silane coupling agent between 0.5 and 2.5 weight percent (column 2, lines 14-27) in order to improve adhesion.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided an epoxy adhesive further comprising a silane coupling agent between 0.5 and 2.5 weight percent in the fluid ejection device of Tom in order to improve adhesion as taught or suggested by Chapman.

Allowable Subject Matter

19. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the

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base claim and any intervening claims. The prior art does not disclose the curing agent recited in claim 28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Miggins whose telephone number is 571-272-1494. The examiner can normally be reached on 1:00-10:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael C. Miggins
Primary Examiner
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March 19, 2007